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*Work of the Service in suppressing smallpox in Alabama.*

BIRMINGHAM, ALA., March 10, 1898.

SIR: I have the honor to make the following report of the work of the Service during the past two months, in its efforts to suppress the epidemic of smallpox in Talladega and Jefferson Counties, Ala.

Smallpox was declared epidemic in Birmingham and Jefferson County in July, 1897, and previous to the date of my arrival, on January 4, 1898, 406 cases and 15 deaths had been reported to the county physician. Quarantine camps had been established near Birmingham and Bessemer, in which 375 and 14 cases had been treated, respectively, and a detention camp, called Camp Evans, in which suspects were detained under observation sixteen days, was located near the former city.

It is difficult to trace the origin of the epidemic. It is claimed by some that the first case came from Memphis, Tenn., during May, 1897; by others, that it was brought from Pensacola, Fla., about the same time; still others state that it had existed among the negroes for the past year or two, and was not recognized or reported by their physicians.

In my opinion, however, it is not improbable, in view of the wide dissemination of the disease throughout the United States during the past few years, that infection occurred simultaneously from several sources. At all events, it was declared epidemic here in the early part of July, 1897.

Jefferson County, in which Birmingham is situated, comprises about 1,000 square miles, and contains a population of about 110,000. Half of this population resides in Birmingham and the remaining half in mining camps and towns varying in size from 100 to 8,000 inhabitants, scattered over the county. The negroes, to whom the disease is almost exclusively confined (only 23 whites having contracted it) here as elsewhere, are the great disseminators of infection. Essentially itinerant, they travel from mining camp to mining camp, from town to town, carrying the disease with them, so that during the month of December cases were reported from 21 towns and camps in this county, and many other localities throughout the State are infected.

Vaccination is compulsory by city ordinance in most of the towns, but with the exception of Birmingham practically no attempt had been made to enforce it. Vaccine virus was furnished free by the county and about 75,000 tubes and points had been distributed previous to my arrival.

The local authorities having failed to arrest the progress of the epidemic and claiming that all available funds (about \$30,000) had been expended, called on the Service for aid, and in accordance with your instructions an offer was made to assume general control of all matters connected with the outbreak, to place officers in charge of quarantine and detention camps, furnish vaccine virus, and organize an inspecting and vaccinating corps, the city and county to bear all other expenses. This offer was accepted January 8, and on the following morning a corps of inspectors (30 in number) commenced work in Birmingham.

Each inspector was assigned a certain territory, varying in extent from 4 to 12 blocks, according to population, and was instructed to make a house-to-house canvass, entering in a notebook the address of each house visited, the names of all inmates of each house, date of last vaccination of each individual, whether or not such vaccination was

successful, and to vaccinate all persons who had not been successfully vaccinated within the last year, as evidenced by an examination of the scar in each case. Each room in every house was to be visited, especially in negro quarters, where smallpox was most prevalent, and a thorough search of the premises made for cases that were being concealed.

No certificate of vaccination was to be honored, and although this, at first glance, may appear an unreasonable and arbitrary ruling, still, when the facts are recalled that in all large towns there are usually some physicians who will give false certificates for a small fee; that there are many persons who will forge certificates; that certificates issued in good faith by reliable physicians may be given by their recipients to parties who have never been vaccinated, and, finally, that a certificate of vaccination is no evidence that such vaccination was successful, the necessity of the above measures will be easily apparent.

The inspectors were especially directed to be at all times courteous in their treatment of persons of all classes, to explain to those who objected, the necessity of the measure and report to me daily for prosecution by civil authorities, the names and addresses of those who refused to be vaccinated or to permit an examination of their vaccination marks. From the nature of their work the inspectors necessarily came in contact with people of all classes, refined and rough, reasonable and unreasonable, crank and sage, still to their credit be it said that only in four instances have complaints been made of discourteous treatment while numerous have been the compliments paid on the thorough but gentlemanly manner in which their difficult and delicate duties were performed.

The men employed as inspectors were selected from among the physicians of the city, second-course medical students, and laymen, many of whom had had previous experience in work of this character. They were given special instructions in vaccinating, and were taught the characteristics of scars made by successful vaccination. Many of them, of course, were not competent to diagnose the disease; therefore, they were instructed to report at once by telephone to my office any cases of a suspicious nature with which they came in contact, and a physician was immediately sent to investigate the matter. If the case proved to be smallpox, the pest wagon was summoned, the patient at once sent to the quarantine camp, the other inmates of the house who could not show marks of recent successful vaccination were vaccinated and kept in the detention camp sixteen days, while those who had been successfully vaccinated were discharged after disinfection of persons and clothing, and, as an additional precaution, were again vaccinated. Infected houses were washed down with bichloride solution (1-800) from a force pump, mattresses, pillows, and bedquilts were burned. Clothing and other articles capable of conveying infection were saturated with the same solution or treated with formaldehyde. As nearly all the infected houses were negro cabins, which are very poorly constructed, with cracks and openings on all sides, gaseous disinfection was considered useless, and only in few houses of the better class were sulphur and formaldehyde employed.

The working hours of the inspectors were from 8 a. m. to 5 p. m., with an hour for lunch, and each one was required to report to the central office in the evening the amount of work done during the day; likewise inspectors in the different towns (some 15 or 20 towns) forwarded by mail on special form (Exhibit A) reports of their daily transactions. From these reports records were compiled in the office, which would

show at a glance, both the daily work of each individual and the total amount of daily work in each town. Two supervising inspectors were appointed whose duty it was to instruct the men in their duties and inspect their work.

As the principal method of spread of the disease seemed to be through negro miners who constantly pass from one mining camp to another, and from camps to town, and as these men usually object to vaccination, and are not within reach of city ordinance, an attempt was made to secure the cooperation of mine owners and superintendents. Meetings were accordingly held on January 9 and 10, which were attended by men whose mines and furnaces employ and support about 40,000 persons, and they agreed to assist me in every way possible. Notices were accordingly published and posted at different mines and furnaces, signed by all the firms that had entered into the agreement, stating that no person could be employed who refused to have himself and family vaccinated.

Previous to this time an attempt had been made by superintendents of some of the companies to enforce vaccination with the result that the men would leave in such numbers as to cause serious embarrassment from lack of laborers, and the attempt was discontinued; as soon as they learned, however, from these notices that neighboring mines would not give them employment unless vaccinated desertion almost entirely ceased, and the inspectors have met with but little opposition in their work at these points. Operations having been successfully begun in Birmingham, I visited as rapidly as possible the remaining infected points in Jefferson County, and inspectors were detailed to carry on the work at the following places in the manner indicated above: Adamsville, Bessemer, Blue Creek (including Johns, Sumpter, and Adger), Brookside, Blossburg, Coalburg, Dolcita, Dolomite, East Lake, Ensley, Irondale, Ishkooda, Mary Lee, Oxmoor, Pratt City, Thomas, Woodlawn, Woodward, Warrior, New Castle, Smith Mines, Leeds, Brighton, Gloss Mines, and Brown's Station.

In addition to the towns and cities of Jefferson County, the Service also assumed charge of affairs in Talladega. Fortunately aid was asked by the mayor early in the epidemic, four weeks after the appearance of the first case, and was promptly extended. This city was inspected on January 15, and guards were placed around all infected houses pending the building of a pesthouse, the erection of which was commenced by the county judge and completed with commendable promptness. On January 17 there were 37 cases of smallpox in the town. A corps of inspectors from the Birmingham force was sent there on the above date, and the transfer of patients to pesthouse, disinfection of houses, etc., was carried on under the personal supervision of Assistant Surgeon Hastings, and I can pay no higher tribute to the thoroughness of his methods than simply to say that on January 30, fourteen days after the commencement of the work, smallpox ceased to exist within the city limits, and not a single case has since been reported. Forty-three cases in all appeared in the city, 3 of which developed among the suspects in the detention camp. The disease here was confined to negroes and white employees of cotton factories, and was attended by no mortality.

The amount of work done by the inspecting corps will be seen from the following table :

Place.	Number of houses inspected.	Number of persons inspected.	Number of persons vaccinated.	Number of cases of smallpox found.		Number of houses disinfected.
				White.	Colored.	
Birmingham .....	22,584	89,612	18,505	7	38	21
Bessemer.....	10,287	32,749	7,936	3	151	160
Other points in Jefferson County.....	6,629	23,448	10,299	4	68	29
Talladega.....	1,713	6,966	2,185	25	18	13
Total .....	41,213	152,775	38,925	39	275	223

The above table simply shows the work done by the corps. It does not give the actual number of houses or persons inspected, for in some towns second and third inspections were partially made, and, of course, many houses and persons were inspected and counted twice and three times.

The total number of cases treated in the three quarantine camps (at Birmingham, Bessemer, and Talladega) under the control of the Service has been 353 with a mortality of 2.55 per cent. If the 406 cases with 15 deaths, which occurred prior to the commencement of Service work, be included in the above the total number of cases will amount to 759 with 3.16 per cent mortality.

The following tables compiled from the records of cases treated at quarantine camp near Birmingham are self-explanatory :

PATIENTS TREATED AT BIRMINGHAM QUARANTINE HOSPITAL, U. S. M. H. S.

Colored .....	219
White .....	6
Total .....	225

Male .....	157
Female .....	68

AGE.

Under one year.....	2
One to ten years.....	21
Ten to twenty years.....	40
Twenty to thirty years .....	113
Thirty to forty years.....	32
Forty to fifty years.....	13
Fifty to sixty years.....	3
Sixty to seventy years.....	1

STAGE OF DISEASE AT TIME OF ADMISSION.

Papular.....	92
Vesicular.....	44
Pustular .....	26
Desquamative .....	58

RECORD OF PREVIOUS VACCINATION.

Number never vaccinated.....	106
Unsuccessfully vaccinated.....	101
Good scars.....	2
Doubtful scars.....	5
Recent vaccination, in course of development.....	7